# EN BLOC AMENDMENTS TO H.R. 610

## OFFERED BY MRS. BIGGERT OF ILLINOIS

Page 8, line 17, strike "and nuclear physics" and insert ", nuclear physics".

Page 8, line 19, strike "and computing" and insert "computing".

Page 9, line 9, insert "in Federal funds" after "$1,100,000,000".

Page 11, line 6, strike "109" and insert "110".

Page 20, line 11, strike "full-time student" and insert "full-time graduate student".

Page 25, after line 25, insert the following new section:

**SEC. 109. SCIENCE AND ENGINEERING PILOT PROGRAM.**

(a) ESTABLISHMENT OF CONSORTIUM.—Notwithstanding section 203, the Secretary shall award a grant to Oak Ridge Associated Universities to establish a university consortium to carry out a regional pilot program for enhancing scientific, technological, engineering, and mathematical literacy, creativity, and decisionmaking. The consortium shall include leading research universities, one or

more universities that train substantial numbers of elementary and secondary school teachers, and, where appropriate, National Laboratories.

(b) PROGRAM ELEMENTS.—The program shall include—

(1) expanding strategic, formal partnerships among universities with strength in research, universities that train substantial numbers of elementary and secondary school teachers, and the private sector;

(2) combining Department expertise with one or more National Aeronautics and Space Administration Educator Resource Centers;

(3) developing programs to permit current and future teachers to participate in ongoing research projects at National Laboratories and research universities and to adapt lessons learned to the classroom;

(4) designing and implementing course work;

(5) designing and implementing a strategy for measuring and assessing progress under the program; and

(6) developing models for transferring knowledge gained under the pilot program to other institutions and areas of the country.

(c) REPORT.—Not later than 2 years after appropriations are first available for the program, the Secretary shall transmit to Congress a report outlining lessons learned and containing a plan for expanding the program nationwide. The Secretary may begin implementation of such plan for expansion of the program on October 1, 2008. The expansion of the program shall be subject to section 203.

Page 26, line 1, redesignate section 109 as section 110.

Page 27, after line 3, insert the following new paragraph:

(6) PILOT PROGRAM.—For activities under section 109, $4,000,000.

Page 27, after line 18, insert the following new paragraph:

(6) PILOT PROGRAM.—For activities under section 109, $4,000,000.

Page 28, after line 8, insert the following new paragraph:

(6) PILOT PROGRAM.—For activities under section 109, $4,000,000.

Page 28, after line 23, insert the following new paragraph:

(6) PILOT PROGRAM.—For activities under section 109, $8,000,000.

Page 29, after line 15, insert the following new paragraph:

(6) PILOT PROGRAM.—For activities under section 109, $8,000,000.

Page 35, line 1, strike "Secretary" and insert "Director of the Office of Science".

Page 35, line 3, strike "Secretary" and insert "Director of the Office of Science".

Page 35, line 7, strike "Secretary" and insert "Director of the Office of Science".

Page 35, line 12, strike "Secretary" and insert "Director of the Office of Science".

Page 35, line 20, strike "at least one third" and insert ", to the extent practicable, members".

Page 38, lines 13 and 14, strike "designate any new or existing facility as a user facility" and insert "allow any Department facility to begin functioning as a user facility after the date of enactment of this Act".

Page 46, lines 1 and 2, strike ", including the Next Generation Lighting Initiative described in subsection (b)".

Page 46, lines 11 through 24, strike subsection (b).

Page 47, line 1, redesignate subsection (c) as subsection (b).

Page 50, after line 3, insert the following new subsection:

(d) STANDARDIZATION REPORT AND PROGRAM.—

(1) REPORT.—The Secretary shall enter into an arrangement with the National Institute of Building Sciences to—

(A) conduct a comprehensive assessment of how well current voluntary consensus standards related to buildings match state-of-the-art knowledge on the design, construction, operation, repair, and renovation of high-performance buildings; and

(B) recommend steps for the Secretary to take to accelerate the development and promulgation of voluntary consensus standards for high-performance buildings that would address all major high-performance building attributes, including energy efficiency, sustainability, safety and security, life-cycle cost, and productivity.

(2) PROGRAM.—After receiving the report under paragraph (1), the Secretary shall establish a

program of technical assistance and grants to support standards development organizations in—

(A) the revision of existing standards, to reflect current knowledge of high-performance buildings; and

(B) the development and promulgation of new standards in areas important to high-performance buildings where there is no existing standard or where an existing standard cannot easily be modified.

Page 51, line 1, through page 52, line 20, strike subsection (c).

Page 59, after line 22, insert the following new section:

**SEC. 307. NEXT GENERATION LIGHTING INITIATIVE.**

(a) IN GENERAL.—The Secretary shall carry out a Next Generation Lighting Initiative in accordance with this section to support research, development, demonstration, and commercial application activities related to advanced solid-state lighting technologies based on white light emitting diodes.

(b) OBJECTIVES.—The objectives of the initiative shall be to develop advanced solid-state organic and inorganic lighting technologies based on white light emitting diodes that, compared to incandescent and fluorescent

lighting technologies, are longer lasting; more energy-efficient; and cost-competitive, and have less environmental impact.

(c) INDUSTRY ALLIANCE.—The Secretary shall, not later than 3 months after the date of enactment of this section, competitively select an Industry Alliance to represent participants that are private, for-profit firms which, as a group, are broadly representative of United States solid state lighting research, development, infrastructure, and manufacturing expertise as a whole.

(d) RESEARCH.—

(1) IN GENERAL.—The Secretary shall carry out the research activities of the Next Generation Lighting Initiative through competitively awarded grants to researchers, including Industry Alliance participants, National Laboratories, and institutions of higher education.

(2) ASSISTANCE FROM THE INDUSTRY ALLIANCE.—The Secretary shall annually solicit from the Industry Alliance—

(A) comments to identify solid-state lighting technology needs;

(B) assessment of the progress of the Initiative's research activities; and

(C) assistance in annually updating solid-state lighting technology roadmaps.

(3) AVAILABILITY OF INFORMATION AND ROADMAPS.—The information and roadmaps under paragraph (2) shall be available to the public and public response shall be solicited by the Secretary.

(e) DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION.—The Secretary shall carry out a development, demonstration, and commercial application program for the Next Generation Lighting Initiative through competitively selected awards. The Secretary may give preference to participants of the Industry Alliance selected pursuant to subsection (c).

(f) INTELLECTUAL PROPERTY.—The Secretary may require, in accordance with the authorities provided in section 202(a)(ii) of title 35, United States Code, section 152 of the Atomic Energy Act of 1954 (42 U.S.C. 2182), and section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908), that—

(1) for any new invention resulting from activities under subsection (d)—

(A) the Industry Alliance members that are active participants in research, development, and demonstration activities related to the advanced solid-state lighting technologies that are

the subject of this section shall be granted first option to negotiate with the invention owner nonexclusive licenses and royalties for uses of the invention related to solid-state lighting on terms that are reasonable under the circumstances; and

(B)(i) for 1 year after a United States patent is issued for the invention, the patent holder shall not negotiate any license or royalty with any entity that is not a participant in the Industry Alliance described in subparagraph (A); and

(ii) during the year described in clause (i), the invention owner shall negotiate nonexclusive licenses and royalties in good faith with any interested participant in the Industry Alliance described in subparagraph (A); and

(2) such other terms as the Secretary determines are required to promote accelerated commercialization of inventions made under the Initiative.

(g) NATIONAL ACADEMY REVIEW.—The Secretary shall enter into an arrangement with the National Academy of Sciences to conduct periodic reviews of the Next Generation Lighting Initiative. The Academy shall review the research priorities, technical milestones, and plans for

technology transfer and progress towards achieving them. The Secretary shall consider the results of such reviews in evaluating the information obtained under subsection (d)(2).

(h) DEFINITIONS.—As used in this section:

(1) ADVANCED SOLID-STATE LIGHTING.—The term "advanced solid-state lighting" means a semiconducting device package and delivery system that produces white light using externally applied voltage.

(2) RESEARCH.—The term "research" includes research on the technologies, materials, and manufacturing processes required for white light emitting diodes.

(3) INDUSTRY ALLIANCE.—The term "Industry Alliance" means an entity selected by the Secretary under subsection (c).

(4) WHITE LIGHT EMITTING DIODE.—The term "white light emitting diode" means a semiconducting package, utilizing either organic or inorganic materials, that produces white light using externally applied voltage.

Page 60, strike lines 1 through 4 and insert the following:

**SEC. 308. DEFINITIONS.**

For the purposes of this subtitle—

(1) the term "cost-effective" means resulting in a simple payback of costs in 10 years or less; and

(2) the term "whole-buildings approach" includes, on a life-cycle basis, the energy use, cost of operations, and ease of repair or upgrade of a building.

Page 60, line 5, redesignate section 308 as section 309.

Page 60, lines 6 through 9, strike "In addition to the sums authorized in the Steel and Aluminum Energy Conservation and Technology Competitiveness Act of 1988, as amended in section 304 of this Act, the" and insert "The".

Page 60, line 19, strike "303(c)" and insert "303(b)".

Page 61, line 3, strike "and".

Page 61, line 6, strike the period and insert "; and".

Page 61, after line 6, insert the following new subparagraph:

(G) $20,000,000 for carrying out the Next Generation Lighting Initiative under section 307.

Page 61, line 14, strike "303(c)" and insert "303(b)".

Page 61, line 22, strike "and".

Page 61, line 25, strike the period and insert "; and".

Page 61, after line 25, insert the following new subparagraph:

(G) $30,000,000 for carrying out the Next Generation Lighting Initiative under section 307.

Page 62, line 8, strike "303(c)" and insert "303(b)".

Page 62, line 16, strike "and".

Page 62, line 19, strike the period and insert "; and".

Page 62, after line 19, insert the following new subparagraph:

(G) $50,000,000 for carrying out the Next Generation Lighting Initiative under section 307.

Page 63, line 2, strike "303(c)" and insert "303(b)".

Page 63, line 7, strike "and".

Page 63, line 10, strike the period and insert "; and".

Page 63, after line 10, insert the following new subparagraph:

(F) $50,000,000 for carrying out the Next Generation Lighting Initiative under section 307.

Page 63, line 18, strike "303(c)" and insert "303(b)".

Page 63, line 23, strike "and".

Page 64, line 3, strike the period and insert "; and".

Page 64, after line 3, insert the following new subparagraph:

(F) $50,000,000 for carrying out the Next Generation Lighting Initiative under section 307.

Page 64, line 4, redesignate section 309 as section 310.

Page 69, after line 17, insert the following new subsection:

(c) HIGH VOLTAGE TRANSMISSION LINES.—As part of the program described in subsection (a), the Secretary shall award a grant to a university research program to design and test, in consultation with the Tennessee Valley Authority, state-of-the-art optimization techniques for power flow through existing high voltage transmission lines.

Page 69, line 22, strike "$210,000,000" and insert "$220,000,000".

Page 69, line 23, strike "$230,000,000" and insert "$240,000,000".

Page 69, line 24, strike "$250,000,000" and insert "$250,000,000".

Page 69, line 25, strike "$270,000,000" and insert "$265,000,000".

Page 70, line 1, strike "$290,000,000" and insert "$275,000,000".

Page 70, line 10, strike "$120,000,000" and insert "$130,000,000, of which $2,000,000 shall be for the program under section 322(c)".

Page 70, line 11, strike "$130,000,000" and insert "$140,000,000".

Page 70, line 12, strike "$155,000,000" and insert "$150,000,000".

Page 70, line 13, strike "$165,000,000" and insert "$160,000,000".

Page 70, line 14, strike "$175,000,000" and insert "$165,000,000".

Page 85, after line 17, insert the following new subsection:

(c) RENEWABLE ENERGY IN PUBLIC BUILDINGS.—

(1) DEMONSTRATION AND TECHNOLOGY TRANSFER PROGRAM.—The Secretary shall establish a program for the demonstration of innovative technologies for solar and other renewable energy sources in buildings owned or operated by a State or local government, and for the dissemination of information resulting from such demonstration to interested parties.

(2) LIMIT ON FEDERAL FUNDING.—The Secretary shall provide under this subsection no more than 40 percent of the incremental costs of the solar or other renewable energy source project funded.

(3) REQUIREMENT.—As part of the application for awards under this subsection, the Secretary shall require all applicants—

(A) to demonstrate a continuing commitment to the use of solar and other renewable energy sources in buildings they own or operate; and

(B) to state how they expect any award to further their transition to the significant use of renewable energy.

Page 111, after line 20, insert the following new section:

**SEC. 606. CARBON DIOXIDE CAPTURE RESEARCH AND DEVELOPMENT.**

(a) PROGRAM.—The Secretary of Energy shall support a 10-year program of research and development aimed at developing carbon dioxide capture technologies for pulverized coal combustion units. The program shall focus on—

(1) developing add-on carbon dioxide capture technologies, such as adsorption and absorption

techniques and chemical processes, to remove carbon dioxide from flue gas, producing concentrated streams of carbon dioxide potentially amenable to sequestration;

(2) combustion technologies that would directly produce concentrated streams of carbon dioxide potentially amenable to sequestration; and

(3) increasing the efficiency of the overall combustion system in order to reduce the amount of carbon dioxide emissions released from the system per megawatt generated.

(b) CARBON SEQUESTRATION.—In conjunction with the program under subsection (a), the Secretary shall continue pursuing a robust carbon sequestration program with the private sector, through regional carbon sequestration partnerships.

Page 111, line 21, redesignate section 606 as section 607.

Page 111, line 22, insert "(a) IN GENERAL.—" before "The following sums".

Page 112, after line 3, insert the following new subsection:

(b) ALLOCATION.—From amounts authorized under subsection (a), there are authorized to be appropriated for carrying out the program under section 606—

(1) $20,000,000 for fiscal year 2006;

(2) $25,000,000 for fiscal year 2007;

(3) $30,000,000 for fiscal year 2008;

(4) $35,000,000 for fiscal year 2009; and

(5) $40,000,000 for fiscal year 2010.

Amend the table of contents accordingly.

2

# AMENDMENT TO H.R. 610

## OFFERED BY MR. COSTELLO OF ILLINOIS

Page 42, after line 10, insert the following new section:

**SEC. 212. EXTERNAL REGULATION OF DEPARTMENT.**

(a) ELIMINATION OF DEPARTMENT AUTHORITY.—Effective 2 years after the date of enactment of this Act, the Department shall have no regulatory or enforcement authority with respect to nuclear safety and occupational safety and health responsibilities assumed by the Nuclear Regulatory Commission under subsection (b) or by the Occupational Safety and Health Administration under subsection (c) at any nonmilitary energy laboratory owned or operated by the Department.

(b) NUCLEAR REGULATORY COMMISSION AUTHORITY.—

(1) NUCLEAR SAFETY REGULATORY AND ENFORCEMENT RESPONSIBILITIES.—Effective 2 years after the date of enactment of this Act, the Nuclear Regulatory Commission shall assume the nuclear safety regulatory and enforcement responsibilities of the Department under the Atomic Energy Act of

1954 with regard to nonmilitary energy laboratories owned or operated by the Department.

(2) LICENSED ENTITIES.—For the purposes of carrying out at nonmilitary energy laboratories owned or operated by the Department regulatory and enforcement responsibilities described in paragraph (1), the Nuclear Regulatory Commission may regulate, through licensing, certification, or other appropriate means, the Department's contractors.

(3) DECOMMISSIONING.—A contractor operating a nonmilitary energy laboratory owned by the Department shall not be responsible for the costs of decommissioning that facility. No enforcement action may be taken against such contractor for any violation of Nuclear Regulatory Commission decommissioning requirements, if such violation is the result of a failure of the Department to authorize or fund decommissioning activities. The Nuclear Regulatory Commission and the Department shall, not later than 1 year after the date of enactment of this Act, enter into a memorandum of understanding establishing decommissioning procedures and requirements for nonmilitary energy laboratories owned or operated by the Department.

(4) ACCELERATORS.—Notwithstanding the provisions of the Atomic Energy Act of 1954 (42 U.S.C. 2011 et. seq.), effective 2 years after the date of enactment of this Act, the Nuclear Regulatory Commission shall have exclusive regulatory authority over accelerators, other electronic sources of radiation not assigned to the Commission as of the date of enactment of this Act, accelerator-produced radioisotopes, and naturally occurring radioactive materials at nonmilitary energy laboratories, consistent with the authorities granted the Nuclear Regulatory Commission in the Atomic Energy Act of 1954. Until such time as the Commission has completed a rulemaking for the foregoing equipment and radioisotopes, nonmilitary energy laboratories shall be required to meet the requirements stipulated in a license for the facility.

(5) ADMINISTRATION.—The responsibilities assumed by the Nuclear Regulatory Commission under this subsection shall be administered by the Nuclear Regulatory Commission, not by States.

(6) JUDICIAL REVIEW.—Section 189 b. of the Atomic Energy Act of 1954 (42 U.S.C. 2239(b)) is amended by adding the following paragraph after paragraph (4):

"(5) Any final order or regulation of the Commission establishing standards to govern nonmilitary energy laboratories owned or operated by the Department of Energy that is issued to implement the Commission's responsibilities under the Act which enacted this paragraph, and any final determination of the Commission relating to whether a nonmilitary energy laboratory owned or operated by the Department is in compliance with such standards and all applicable Commission regulations or orders.".

(7) EMPLOYEE PROTECTION.—Any Department contractor operating a nonmilitary energy laboratory that is regulated by the Nuclear Regulatory Commission under this section shall be subject to section 211 of the Energy Reorganization Act of 1974 (42 U.S.C. 5851) to the same extent as any other employer subject to such section 211.

(8) CONFLICT OF INTEREST.—Section 170A of the Atomic Energy Act of 1954 (42 U.S.C. 2210a) applies to contracts, agreements, or other arrangements of the Nuclear Regulatory Commission proposed or entered into pursuant to its responsibilities assumed under this subsection.

(c) OCCUPATIONAL SAFETY AND HEALTH.—

(1) OSHA JURISDICTION.—Notwithstanding section 4(b)(1) of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653(b)(1)), effective 2 years after the date of enactment of this Act, the Occupational Safety and Health Administration shall assume the exclusive regulatory and enforcement responsibilities of the Department relating to matters covered by the Occupational Safety and Health Act of 1970 with regard to all nonmilitary energy laboratories owned or operated by the Department, except as provided in paragraph (2). The responsibilities assumed by the Occupational Safety and Health Administration under this subsection shall be administered by the Occupational Safety and Health Administration, not by States. Any Department contractor operating such a laboratory shall, with respect to matters relating to occupational safety and health, be considered to be an employer for purposes of the Occupational Safety and Health Act of 1970.

(2) REGULATION OF HAZARDS CONTAINING RADIOLOGICAL AND NON-RADIOLOGICAL COMPONENT.—If a hazard at a nonmilitary energy laboratory owned or operated by the Department presents a risk of occupational exposure and contains both a radiological and non-radiological component, the Oc-

cupational Safety and Health Administration and the Nuclear Regulatory Commission shall, effective 2 years after the date of enactment of this Act, share regulatory and enforcement responsibilities with respect to the hazard in accordance with the memorandum of understanding entered into pursuant to subsection (d).

(d) MEMORANDUM OF UNDERSTANDING.—The Nuclear Regulatory Commission and the Occupational Safety and Health Administration shall, not later than 1 year after the date of enactment of this Act, enter into and transmit to the Congress a memorandum of understanding to govern the exercise of their respective authorities over nuclear safety and occupational safety and health at nonmilitary energy laboratories owned or operated by the Department.

(e) CIVIL PENALTIES.—The Department's contractor operating a nonmilitary energy laboratory owned or operated by the Department shall not be liable for civil penalties under the Atomic Energy Act of 1954 or the Occupational Safety and Health Act of 1970 for any actions taken before the date of transfer of regulatory authority under this section, pursuant to the instructions of a Federal agency in preparation for the transfer of regulatory and enforcement responsibilities required by this section.

(f) INDEMNIFICATION.—The Secretary shall continue to indemnify nonmilitary energy laboratories owned or operated by the Department in accordance with the provisions of section 170 d. of the Atomic Energy Act of 1954.

(g) DEPARTMENT REPORTING REQUIREMENT.—Not later than 18 months after the date of enactment of this Act, the Secretary shall transmit to the Congress a plan for the termination of the Department's regulatory and enforcement responsibilities for nonmilitary energy laboratories owned or operated by the Department required by this section. The report shall include—

(1) a detailed transition plan, drafted in coordination with the Nuclear Regulatory Commission and the Occupational Safety and Health Administration, giving the schedule for termination of self-regulation authority as outlined in subsection (a), including the activities to be coordinated with the Nuclear Regulatory Commission and the Occupational Safety and Health Administration;

(2) a description of any issues remaining to be resolved with the Nuclear Regulatory Commission, the Occupational Safety and Health Administration, or other external regulators, and a timetable for resolving such issues by the authority transfer date established under this section; and

(3) an estimate of—

(A) the annual cost of administering and implementing self-regulation of the nuclear safety and occupational safety and health responsibilities described in subsections (b) and (c) at nonmilitary energy laboratories owned or operated by the Department;

(B) the number of Federal and contractor employees administering and implementing such self-regulation; and

(C) the extent and schedule by which the Department and the staffs at its nonmilitary energy laboratories will be reduced as a result of implementation of this section.

(h) GENERAL ACCOUNTING OFFICE REPORTING REQUIREMENT.—The Comptroller General of the United States shall periodically report to the Congress on the progress made in implementing this section. The Comptroller General shall provide a report not later than 20 months after the date of enactment of this Act on the Department's transition plan, and not later than 26 months after the date of enactment of this Act on the implementation of Nuclear Regulatory Commission and Occupational Safety and Health Administration regulations in the nonmilitary energy laboratories.

(i) DEFINITION.—For purposes of this section, the term "nonmilitary energy laboratory" means—

(1) Ames Laboratory;

(2) Argonne National Laboratory;

(3) Brookhaven National Laboratory;

(4) Fermi National Accelerator Laboratory;

(5) Lawrence Berkeley National Laboratory;

(6) Oak Ridge National Laboratory;

(7) Pacific Northwest National Laboratory;

(8) Princeton Plasma Physics Laboratory;

(9) Stanford Linear Accelerator Center; or

(10) Thomas Jefferson National Accelerator Facility.